

### **REMARKS**

Claims 1-14 are pending in the application. Claims 1, 7, 8 and 14 have been amended herein. Favorable reconsideration of the application, as amended, is respectfully requested.

Applicants have amended the title of the invention to be more descriptive as requested by the Examiner.

#### ***I. OBJECTION TO THE SPECIFICATION AND DRAWINGS***

The Examiner initially objects to the drawings/specification as failing to indicate the relationship between the elements shown in FIG. 6 in comparison to FIG. 7, and likewise the elements shown in FIG. 12 in comparison to FIG. 13. Applicants respectfully request withdrawal of the objection for at least the following reasons.

Regarding FIGS. 6 and 7, applicants refer to the specification at page 21, line 30 to page 22, line 9. In particular, the specification describes how the main conversion section 116, the sub conversion section 117, the NRZI conversion sections 118 and 119, the CDS operation sections 120 and 121, the DSV comparison section 122, the run length determination section 123, the state selector 124, the code word selector 125, and the parallel-serial conversion section 126 of FIG. 7 act as a modulation section 105 of FIG. 6. The specification goes on to state how the system control section 115 in FIG. 7 acts as the parameter value changing section 102 in FIG. 6. The recording section 127 in FIG. 7 is similarly shown as the recording section in FIG. 6.

With respect to FIGS. 12 and 13, applicants refer to the specification at page 37, line 21 to page 38, line 1, which similarly describes the correspondence.

Accordingly, applicants respectfully submit that the specification and drawings are clear insofar as the correspondence between the respective elements. Applicants respectfully request withdrawal of the objection.

**II. REJECTION OF CLAIM 8 UNDER 35 USC §101**

Claim 8 stands rejected under 35 USC §101 as being directed to non-statutory subject matter. Applicants respectfully request withdrawal of the rejection for at least the following reasons.

The Examiner indicates that claim 8 simply states what a recording medium has, and is not clear whether the claim itself pertains to an apparatus or a method as such.

Applicants have amended claim 8 to clarify that it is directed to the particular structure and thereby represents statutory subject matter. More particularly, amended claim 8 emphasizes the structure of the data recorded on the recording medium rather than the manner in which the data is recorded on the recording medium. For example, claim 8 now recites that the modulated data on the recording medium is data modulated in accordance with a prescribed modulation rule, and at least one parameter value of the prescribed modulation rule is changed among the modulated data recorded thereon. Applicants note that data modulated in accordance with the recited criteria will have a structure or format that embodies modulation in accordance with the recited criteria.

Accordingly, applicants respectfully submit that amended claim 8 is directed clearly to statutory subject matter. Withdrawal of the rejection is respectfully requested.

**III. REJECTION OF CLAIMS 8 AND 14 UNDER 35 USC §112, 2<sup>nd</sup> ¶**

Claims 8 and 14 stand rejected under 35 USC §112, second paragraph, as being indefinite. Applicants respectfully request withdrawal of this rejection for at least the following reasons.

The Examiner indicates that it is unclear whether claims 8 and 14 are directed towards an apparatus or method. As noted above, applicants have amended claim 8 to

clarify that the claim is directed to an apparatus. Similarly, claim 14 has been amended to emphasize the manner in which the claim is directed to the structure.

In view of the above, applicants respectfully request withdrawal of the rejection.

#### **IV. REJECTION OF CLAIMS 1-7 AND 9-13 UNDER 35 USC §102(b)**

Claims 1-7 and 9-13 are rejected under 35 USC §102(b) based on *Tanoue et al.* Applicants respectfully request withdrawal of this rejection for at least the following reasons.

*Tanoue et al.* describes an optical information recording apparatus and method in which the recording start and stop positions are set at random so as to shift the location of the recording field randomly in order to avoid whole field degradation due to repeated recording. (See, e.g., Col. 9, Ins. 21-37).

In addition, *Tanoue et al.* teaches providing polarity randomization. Polarity randomization involves changing the polarity of the recording waveform after NRZI conversion at random period. The polarity is randomized in order to record a conventional marked portion as a spaced portion or vice versa so degradation in signal quality due to repeated recording can be minimized. (See, e.g., Col. 11, Ins. 9-20).

FIG. 7 of *Tanoue et al.* illustrates a random shift parameter generator 38 for producing random values of P, J, and K for controlling the start, stop and polarity of the data recording. The Examiner contends that the random shift parameter generator 38 in *Tanoue et al.* performs the features recited in claims 1-7 and 9-13.

#### **Claims 1 and 7:**

Applicants believe the present invention to be fundamentally different from that which is taught in *Tanoue et al.* However, in view of the breadth of original claim 1,

applicants have amended claim 1 herein. Specifically, claim 1 has been amended to recite “wherein the prescribed modulation rule is a state-type modulation rule or uses a digital sum value, and the at least one parameter value is an initial value of a state or the digital sum value”.

Support for such amendment is found, for example, at page 13, lines 1-11 of the present application, and in original claims 2 and 3.

*Tanoue et al.* does not teach or suggest a recording apparatus wherein the prescribed modulation rule is a state-type modulation rule or uses a digital sum value, and the at least one parameter value is an initial value of a state or the digital sum value, as recited in amended claim 1. Insofar as the Examiner may feel that *Tanoue et al.* does teach such features based on the rejection of original claims 2 and 3, applicants note the following.

Regarding claim 2, applicants respectfully submit that changing the values of J, K, and P as taught in *Tanoue et al.* does not represent changing an initial value of a state in connection with a state-modulation rule (as now recited in amended claim 1). Similarly, applicants respectfully submit that changing of the values of J, K and P does not have any relationship to changing the initial value of the digital sum value (as recited in original claim 3, and now in amended claim 1).

As noted above, the random shift parameter generator 38 in *Tanoue et al.* produces random values of P, J, and K for controlling the start, stop and polarity of the data recording. Nowhere has it been found that the values of P, J and/or K are based on or represent an initial value of a state of a state modulation method or the digital sum value as recited in amended claim 1. Instead, *Tanoue et al.* describes how the value J defines the length of the “gap field” and the “buffer field”; the value K defines the lengths of the “Guard 1 field” and “Guard 2 field”; and the value P defines the initial signal polarities in the “Guard 1 field” and “Guard 2 field”. (See, e.g., Col. 13, Ins. 20-29). Such values defining the length or polarity of a field do not constitute an initial value of a state within a state modulation method or the digital sum value.

Similar amendments have been made to method claim 7 and medium claim 8. Likewise, arguments similar to those presented above with respect to claim 1 similarly apply.

Regarding claim 5, applicants respectfully submit it is inconsistent and incorrect for the Examiner to argue that the output of the random shift parameter generator 38 represents parameter values in a prescribed order as recited in claim 5. Applicants note that the Examiner refers to “moment parameter is in a prescribed order” in relation to claim 5 (see, O.A., p. 4). However, applicants cannot find any reference to a “moment parameter” in *Tanoue et al.*

For at least the above reasons, applicants respectfully request withdrawal of the rejection of claims 1, 5, 7, 8, and the claims dependent therefrom.

***Claims 9 and 13:***

Regarding claims 9 and 13, these claims recite changing a parameter value representing a target value of an offset of a data recording position from a prescribed reference position. An offset amount changing section then changes the offset amount of the data recording position from the prescribed reference position such that as data recording proceeds, the offset amount of the data recording position from the prescribed reference position approaches the target value.

*Tanoue et al.* refers to the use of a PS field for detecting the variation in the recording position of the information signal (see, e.g., column 6, lines 21-31). *Tanoue et al.* also describes how the location of the recorded data may shift within the guard field and gap field as shown in FIGS. 4-5.

However, *Tanoue et al.* does not teach or suggest providing an offset amount changing section for changing the offset amount of the data recording position such that as data recording proceeds the prescribed reference position approaches a target value as recited in the claims.

In particular, although *Tanoue et al.* may teach that the generated values of J, K and P are supplied to the modulator 14 so that recording data is modulated to record information on the basis of a sector format based on J, K and P, but this does not represent an offset amount changing section as recited in the claims.

For example, the present application describes how the recording clock generation circuit 230 (e.g., the offset amount changing section) includes a first timing signal generator 236, a second timing signal generator 237, a phase difference detector 238, a filter 239, and a PLL circuit 240. The recording clock generation circuit 230 changes the offset amount of the data recording position with respect to the prescribed reference position such that the offset amount approaches the target value as the recording of data proceeds. (See, e.g., Spec., p. 33, Ins. 3-6 and p. 37, Ins. 21-31).

Thus, withdrawal of the rejection with respect to claims 9, 14, and the claims dependent therefrom, is respectfully requested.

## **V. CONCLUSION**

Accordingly, all claims 1-14 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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